



UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT

# 28  
12/5/03  
NOT  
ENTERED

Applicant: STEVENS; Fred J. et. al.  
Title: "DEVICE FOR DETECTING MOLECULES, METHOD FOR  
DETECTING MOLECULES"  
Serial No.: 09/368,989  
Filing Date: August 5, 1999  
Examiner: Dr. Lisa V. Cook  
Art Unit: 1641  
Attny Docket: 0003/00332

CERTIFICATE OF MAILING: I hereby certify that this correspondence is being deposited per 37 C.F.R. 1.8 with the United States Postal service as first class mail in an envelope addressed to the Commissioner for Patents, Alexandria, VA 22313 on November 5, 2003 (Date of Deposit).

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Name of Representative

[Signature]  
Signature

November 5, 2003  
Date of Signature

Mail Stop Non-Fee Amendment  
Commissioner for Patents  
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**AMENDMENT-REMARKS**

Sir:

In response to the May 5, 2003 Official Action in the above-identified matter, please amend the application and consider the following remarks:

Claims 22-31 are hereby canceled without prejudice.

Page two of the Official Action, in paragraph 4 states that no information disclosure statement was filed in this matter. However, paragraph 5 states that the information disclosure statement filed by the applicant on October 21, 2002 (photocopy enclosed herewith) was considered. Furthermore, the Pokkuluri et al reference cited on page 8 (line 6) of the specification has been listed by the Examiner in the July 15, 2002 Official Action.

Clarification is requested.

On page 6 of the Official Action, in paragraph 12, claim 11 is objected to as being redundant. Pursuant to the Examiner's suggestion, Applicant hereby cancels claim 11.

Page 6, paragraph 13 states that claim 10 is vague for its "opposite ends of the molecule" recitation. Applicant has amended claim 10 to recite that the two antigen binding sites are positioned at opposite ends of the molecule. Claim 10 also has been amended to recited that the first moiety is rotated 180 degrees compared to the second moiety. Support for this additional limitation is found throughout the specification, particularly in FIG. 2 and on page 11, line 11. Claim 10 also has been amended to recite a hydrophobic residue situated intermediate the first and second moiety. Support for this limitation is found on page 14, lines 14-22.

Page 7, paragraph 14 of the Official Action states that the specification lacks adequate description related to specific amino acid sequences, per 35 U.S.C. §112, first paragraph. Applicant submits that in light of the instant canceling of claims 23-31, which recited specific light chain variable domains, the 112 first paragraph rejection is now obviated.

Page 12, paragraph 16 of the Official Action states that claims 10-14 and 21-31 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by a specific utility. Claim 10 has been amended by reinserting a portion of its original language, to wit: a molecule capable of binding a plurality of antigens. In light of the instant amendment, Applicant submits that the 35 U.S.C. §101 rejection is now obviated.

On Page 14, paragraph 17, section I, claims 10-13, 21, and 22-24 are rejected under 35 U.S.C. 103(b) as being unpatentable over Stevens et al in view of Berry et al. Applicants submit that neither piece of prior art anticipates or suggests the oppositely placed antigen binding sites, the non-antigen binding sites, or the intermediately positioned hydrophobic residues as now claimed in the dimeric structure. Neither art anticipates or suggests multiple binding sites on one molecule.

Furthermore, it should be noted if in fact Berry teaches connecting antibody

fragments via peptide linkers, Berry does not anticipate or suggest the now-claimed molecule of claim 10 whereby a peptide linker connects antigen binding with non-antigen binding regions *within a single antibody fragment*.

In light of the foregoing, Applicant submits that the 35 U.S.C. 103(b) rejection based on Stevens et al in view of Berry et al. is misplaced. Withdrawal of the rejection is respectfully requested.

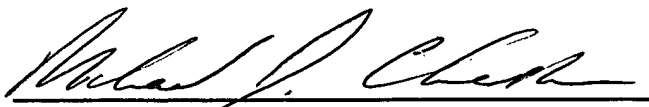
Claim 14 is rejected under 35 U.S.C. 103(b) as being unpatentable over Stevens et al in view of Berry et al. and further in view of Goling and Skoog et al. Apparently, Goling and Skoog were cited for their disclosure of 20,000 to 30,000 Dalton values. In light of the foregoing traversal of the rejection based on Stevens and Berry, Applicant submits that the rejection based on Stevens, Berry, Goling and Skoog is obviated.

None of the art of record anticipate or suggest generating a molecule from two moieties, which themselves derive from the same gene. None of the art of record anticipate or suggest positioning antigen receptors at opposite ends of a dimer molecule, and/or increasing the stability of the aggregated dimer via the juxtaposition of hydrophobic residues between the moieties. In light of the foregoing, Applicant requests withdrawal of the 35 U.S.C. 103(b) rejections and allowance of the claims as amended.

An earnest attempt has been made hereby to respond to the May 5, 2003 Official Action in the above-identified matter. All claims are deemed in condition for allowance. If the Examiner feels that a telephonic interview will expedite allowance, she is respectfully urged to call the undersigned. Claims 10-14 and 21 are pending in the application. Allowance of said claims is hereby solicited.

Respectfully submitted,

**CHERSKOV & FLAYNIK**

  
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